IN THE CLAIMS:

1. (Original) A network switch for network communications, said network switch comprising:

a first data port interface, said first data port interface supporting at least one data port transmitting and receiving data at a first data rate;

a second data port interface, said second data port interface supporting at least one data port transmitting and receiving data at a second data rate;

a CPU interface, said CPU interface configured to communicate with a CPU;

a memory management unit for communicating data from at least one of said first data port interface and said second data port interface and a memory;

a communication channel, said communication channel for communicating data and messaging information between said first data port interface, said second data port interface, and said memory management unit;

a plurality of lookup tables, said lookup tables including an address resolution lookup table and a VLAN table,

wherein one of said first data port interface and said second data port interface is configured to determine forwarding information from a flexible length header for an incoming data packet received at a port of said one of said first data port interface and said second data port interface, and is configured to determine the forwarding information by shifting the information field positions read from the flexible length header.

2. (Original) A network switch as recited in claim 1, wherein one of said first data port interface and said second data port interface is configured to determine an amount of shifting of the information field positions by reading an extended header field of the flexible length header.

3. (Original) A network switch as recited in claim 1, wherein the second data rate is greater than the first data rate, the flexible length header of the incoming data packet contains an opcode used to identify a packet type, the incoming data packet arrives at a port of the second data port interface, and the second data port interface is configured to forward the incoming data packet based on the opcode.

4. (Original) A network switch as recited in claim 3, wherein said opcode identifies whether the incoming data packet is a unicast packet, a multicast packet, a broadcast packet or resulted in a destination lookup failure.

5. (Original) A method of switching data in a network switch, said method comprising:

receiving an incoming data packet at a first port of a switch;

reading a first packet portion, less than a full packet length, to determine particular packet information, said particular packet information including a source address and a destination address;

obtaining an egress port or egress ports based on said particular packet information; and

sending the incoming data packet to the egress port or egress ports;

wherein the incoming data packet has a flexible length header, the first packet portion is read from the flexible length header and the particular packet information is read by shifting the information field positions to account for the flexible length of the flexible length header.

6. (Original) A method as recited in claim 5, wherein an amount of shifting of the information field positions is determined by reading an extended header field of the flexible length header.

7. (Original) A method as recited in claim 5, wherein the step of receiving the incoming data packet at the first port comprises receiving the incoming data packet at an interconnect port interface, where the interconnect port interface provides communication with ports of at least one other stack-linked network switch, and the flexible length header of the incoming data packet contains an opcode used to identify a packet type, the method further comprises the step of forwarding the incoming data packet based on the opcode.

8. (Original) A method as recited in claim 7, wherein said opcode identifies whether the incoming data packet is a unicast packet, a multicast packet, a broadcast packet or resulted in a destination lookup failure.

9. (Original) A network switch comprising:

means for receiving an incoming data packet at a first port of the switch;

means for reading a first packet portion, less than a full packet length, to determine particular packet information, said particular packet information including a source address and a destination address;

means for obtaining an egress port or egress ports based on said particular packet information; and

means for sending the incoming data packet to the egress port or egress ports;

wherein the incoming data packet has a flexible length header, the first packet portion is read by the means for reading from the flexible length header and the particular packet information is read by the means for reading by shifting the information field positions to account for the flexible length of the flexible length header.

10. (Original) A network switch as recited in claim 9, wherein an amount of shifting of the information field positions by the means for obtaining an egress port or egress ports is determined by reading an extended header field of the flexible length header.

11. (Original) A network switch as recited in claim 9, wherein the means for receiving the incoming data packet at the first port comprises means for receiving the incoming data packet at an interconnect port interface, where the interconnect port interface provides communication with ports of at least one other stack-linked network switch, and the flexible length header of the incoming data packet contains an opcode used to identify a packet type, the switch further comprises the means for forwarding the incoming data packet based on the opcode.

12. (Original) A network switch as recited in claim 11, wherein said opcode identifies whether the incoming data packet is a unicast packet, a multicast packet, a broadcast packet or resulted in a destination lookup failure.